

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-7 (Canceled).

Claim 8 (Currently amended): A process for preparing a primary aqueous dispersion of a polyurethane, ~~said process~~ comprising:

reacting the following components a), b1), and c) and optionally b2), optionally b3), and optionally b4) in the presence of water, thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol having a number average molecular weight of 800 to 5000 g/mol, comprising a structural unit  $[-CH_2-CH_2-O-]_w$ , and at least one terminal structural unit

$-CH_2-O-H$

wherein

w is a positive integer from 10 to 200,

a fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight,

~~wherein said structural unit  $[-CH_2-CH_2-O-]_w$  is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a number average molecular weight of between 106 and 2000, and ethylene oxide;~~

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups,

b4) is at least one monofunctional monomer having an isocyanate-reactive group, and

c) is at least one ionic or potentially ionic synthesis component,

wherein the component c) is represented by the general formula  $RG-R^1-DG$ ,

wherein RG is at least one isocyanate reactive group,

DG is at least one actively dispersing group, and

$R^1$  is an aliphatic, cycloaliphatic or aromatic radical comprising 1 to 20 carbon atoms;

wherein

~~the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and~~

the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least ~~[[3]]~~ 5% by weight.

Claim 9 (Previously presented): The process according to claim 8, wherein dispersing takes place with shear forces below  $10^8$  W/cm<sup>3</sup>.

Claims 10-20 (Canceled).

Claim 21 (Canceled).

Claim 22 (Previously presented): The process according to claim 8, wherein the polyol b1) is a copolymer comprising ethylene oxide and propylene oxide.

Claim 23 (Previously presented): The process according to claim 22, wherein the copolymer is a block copolymer.

Claim 24 (Canceled).

Claim 25(Previously presented): The process according to claim 8, wherein the polyol b1) is a polyesterol.

Claim 26 (Currently amended): The process according to claim 8, wherein the z-average particle size of the dispersed polyurethane as measured by dynamic light scattering using the Malvern® Autosizer 2 C is below 100 nm.

Claim 27 (Currently amended): A process for preparing a primary dispersion, said process comprising:

reacting the following components a), b1), and optionally b2), optionally b3), optionally b4) and optionally c) in the presence of water, thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;

wherein

first all components are mixed with water, to obtain an emulsion having a water phase,

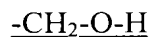
then said emulsion is heated,

after the reaction temperature has been reached, a catalyst is added to the water phase of said emulsion, and

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol having a number average molecular weight of 800 to 5000 g/mol. comprising a structural unit  $[-CH_2-CH_2-O-]_w-$ , and at least one terminal structural unit



wherein

w is a positive integer from 10 to 200,

a fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight,

~~wherein said structural unit  $[-CH_2-CH_2-O]_w$  is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a number average molecular weight of between 106 and 2000, and ethylene oxide;~~

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups,

b4) is at least one monofunctional monomer having an isocyanate-reactive group, and

c) is at least one ionic or potentially ionic synthesis component,

wherein the component c) is represented by the general formula  $RG-R^1-DG$ ,

wherein RG is at least one isocyanate reactive group,

DG is at least one actively dispersing group, and

$R^1$  is an aliphatic, cycloaliphatic or aromatic radical comprising 1 to 20 carbon atoms;

wherein

~~the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and~~

the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least  $[[3]]$  5% by weight.

Claim 28 (Previously presented): The process according to claim 27, wherein dispersing takes place with shear forces below  $10^8$  W/cm<sup>3</sup>.

Claim 29 (Currently amended): The process according to claim 27, wherein the number average molecular weight of the polyol b1) is ~~500~~ 800 to 2000 g/mol.

Claim 30 (Previously presented): The process according to claim 27, wherein the polyol b1) is a copolymer comprising ethylene oxide and propylene oxide.

Claim 31 (Previously presented): The process according to claim 30, wherein the copolymer is a block copolymer.

Claim 32 (Canceled).

Claim 33 (Previously presented): The process according to claim 27, wherein the polyol b1) is a polyesterol.

Claim 34 (Currently amended): The process according to claim 27, wherein the z-average particle size of the dispersed polyurethane as measured by dynamic light scattering using the Malvern® Autosizer 2 C is below 100 nm.

Claim 35 (Previously presented): A method of coating a substrate, comprising:  
applying the aqueous primary dispersion obtained by the process of Claim 8 to the substrate, thereby coating the substrate.

Claim 36 (Previously presented): The method of claim 35, wherein the substrate comprises a material selected from the group consisting of wood, wood veneer, paper, board,

card, textile, leather, nonwoven, plastic, glass, ceramic, metals, coated metals, and mineral building materials.

Claim 37 (Previously presented): A method of coating a substrate, comprising:  
applying the aqueous primary dispersion obtained by the process of claim 27 to the substrate, thereby coating the substrate.

Claim 38 (Previously presented): The method of claim 37, wherein the substrate comprises a material selected from the group consisting of wood, wood veneer, paper, board, card, textile, leather, nonwoven, plastic, glass, ceramic, metals, coated metals, and mineral building materials.

Claim 39 (Canceled).

Claim 40 (Previously presented): The process according to claim 8, wherein RG is -OH.

Claim 41 (Previously presented): The process according to claim 8, wherein RG is  $\text{NHR}^2$ , wherein  $\text{R}^2$  is methyl, ethyl, isopropyl, n-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, cyclopentyl or cyclohexyl.

Claim 42 (Previously presented): The process according to claim 8, wherein RG is  $\text{NHR}^2$ , wherein  $\text{R}^2$  is cyclohexyl.

Claim 43 (Previously presented): The process according to claim 8, wherein the component c) is selected from the group consisting of monohydroxycarboxylic acids, monohydroxysulfonic acids, monoaminocarboxylic acids, monoaminosulfonic acids and mixtures thereof.

Claim 44 (Previously presented): The process according to claim 8, wherein the component c) is selected from the group consisting of mercaptoacetic acid, mercaptopropionic acid, thiolactic acid, mercaptosuccinic acid, glycine, iminodiacetic acid, sarcosine, alanine,  $\beta$ -alanine, leucine, isoleucine, aminobutyric acid, hydroxyacetic acid, hydroxypivalic acid, lactic acid, hydroxysuccinic acid, hydroxydecanoic acid, dimethylolpropionic acid, dimethylolbutyric acid, ethylenediaminetriacetic acid, hydroxydodecanoic acid, hydroxyhexadecanoic acid, 12-hydroxystearic acid, aminonaphthalinecarboxylic acid, hydroxyethanesulfonic acid, hydroxypropanesulfonic acid, mercaptoethanesulfonic acid, mercaptopropanesulfonic acid, aminomethanesulfonic acid, taurine, aminopropanesulfonic acid and mixtures thereof.

Claim 45 (Currently amended): The process according to claim 8, wherein ~~in a first step~~ prior to reacting the components, an a homogeneous organic phase containing at least components a) and b1) is prepared ~~homogeneously and in a second step said the~~ organic phase is added to a water phase or a water phase is added to the organic phase.

Claim 46 (Currently amended): The process according to claim 27, wherein ~~in a first step~~ prior to reacting the components, an a homogeneous organic phase containing at least components a) and b1) is prepared ~~homogeneously and in a second step said the~~ organic phase is added to a water phase or a water phase is added to the organic phase.

Claim 47 (Previously presented): The process according to claim 27, wherein RG is -OH.

Claim 48 (Previously presented): The process according to claim 27, wherein RG is  $\text{NHR}^2$ , wherein  $\text{R}^2$  is methyl, ethyl, isopropyl, n-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, cyclopentyl or cyclohexyl.

Claim 49 (Previously presented): The process according to claim 27, wherein RG is  $\text{NHR}^2$ , wherein  $\text{R}^2$  is cyclohexyl.

Claim 50 (Previously presented): The process according to claim 27, wherein the component c) is selected from the group consisting of monohydroxycarboxylic acids, monohydroxysulfonic acids, monoaminocarboxylic acids, monoaminosulfonic acids and mixtures thereof.

Claim 51 (Previously presented): The process according to claim 27, wherein the component c) is selected from the group consisting of mercaptoacetic acid, mercaptopropionic acid, thiolactic acid, mercaptosuccinic acid, glycine, iminodiacetic acid, sarcosine, alanine,  $\beta$ -alanine, leucine, isoleucine, aminobutyric acid, hydroxyacetic acid, hydroxypivalic acid, lactic acid, hydroxysuccinic acid, hydroxydecanoic acid, dimethylolpropionic acid, dimethylolbutyric acid, ethylenediaminetriacetic acid, hydroxydodecanoic acid, hydroxyhexadecanoic acid, 12-hydroxystearic acid, aminonaphthalenecarboxylic acid, hydroxyethanesulfonic acid, hydroxypropanesulfonic acid,



mercaptoethanesulfonic acid, mercaptopropanesulfonic acid, aminomethanesulfonic acid, taurine, aminopropanesulfonic acid and mixtures thereof.

Claim 52 (Previously presented): The process according to claim 8, wherein RG is -OH, -SH, -NH<sub>2</sub>, or -NHR<sup>2</sup>, where R<sup>2</sup> is methyl, ethyl, iso-propyl, n-propyl, n-butyl, isobutyl, sec-butyl, tert-butyl, cyclopentyl or cyclohexyl.

Claim 53 (Previously presented): The process according to claim 27, wherein RG is -OH, -SH, -NH<sub>2</sub>, or -NHR<sup>2</sup>, wherein R<sup>2</sup> is methyl, ethyl, iso-propyl, n-propyl, n-butyl, isobutyl, sec-butyl, tert-butyl, cyclopentyl or cyclohexyl.

Claim 54 (Currently amended): A process for preparing a primary aqueous dispersion, ~~said process~~ comprising:

reacting the following components a), b1), and optionally b2), optionally b3), optionally b4) and optionally c) in the presence of water, thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;

wherein

first all components are mixed with water, to obtain an emulsion having a water phase and an oil phase,

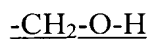
then ~~said the~~ emulsion is heated to a reaction temperature, and

after the reaction temperature has been reached, a catalyst is added to the oil phase of ~~said the~~ emulsion, and

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol having a number average molecular weight of 800 to 5000 g/mol. comprising a structural unit  $[-CH_2-CH_2-O-]_w$ , and at least one terminal structural unit



wherein

w is a positive integer from 10 to 200,

a fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight,

~~wherein said structural unit  $[-CH_2-CH_2-O-]_w$  is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a number average molecular weight of between 106 and 2000, and ethylene oxide;~~

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups,

b4) is at least one monofunctional monomer having an isocyanate-reactive group, and

c) is at least one ionic or potentially ionic synthesis component,

wherein the component c) is represented by the general formula  $RG-R^1-DG$ ,

wherein RG is at least one isocyanate reactive group,

DG is at least one actively dispersing group, and

$R^1$  is an aliphatic, cycloaliphatic or aromatic radical comprising 1 to 20 carbon atoms;

wherein

~~the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and~~

the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least  $[[3]] \geq 5\%$  by weight.

Claim 55 (Currently amended): A process for preparing a primary dispersion, ~~said process~~ comprising:

reacting the following components a), b1), and optionally b2), optionally b3), optionally b4) and optionally c) in the presence of water, thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;

wherein

first all components are mixed with water, to obtain an emulsion having a water phase and an oil phase,

a catalyst is added to the water phase of ~~said~~ the emulsion, and

then ~~said~~ the emulsion is heated, and

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol having a number average molecular weight of 800 to 5000 g/mol. comprising a structural unit  $[-CH_2-CH_2-O-]_w-$ , and at least one terminal structural unit

$-CH_2-O-H$

wherein

w is a positive integer from 10 to 200,

a fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight,

~~wherein said structural unit  $[-CH_2-CH_2-O-]_w-$  is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a number average molecular weight of between 106 and 2000, and ethylene oxide;~~

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups,

b4) is at least one monofunctional monomer having an isocyanate-reactive group, and

c) is at least one ionic or potentially ionic synthesis component,

wherein the component c) is represented by the general formula  $RG-R^1-DG$ ,

wherein RG is at least one isocyanate reactive group,

DG is at least one actively dispersing group, and

$R^1$  is an aliphatic, cycloaliphatic or aromatic radical comprising 1 to 20 carbon atoms;

wherein

~~the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and~~

the fraction of the structural units  $[-CH_2-CH_2-O-]$ , calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least  $[[3]]$  5% by weight.

Claim 56 (Previously presented): The process according to claim 27, wherein the component c) is not present.